

Remarks

Applicants respectfully request reconsideration of the above-identified application. Claims 1-106 remain in this application. Applicants respectfully traverse the rejections as applied to the pending claims.

I. Rejection under §102(e) based on Patrick

Claims 1-10 12-13, 16-35, 37-38, and 40-61 were rejected under 35. U.S.C. §102(e) as anticipated by U.S. Patent 6,060,136 to Patrick. Patrick '136 corresponds to International Patent Application Publication WO 97/28964, which published on August 14, 1997. Applicants respectfully traverse this rejection.

To anticipate a claim, an applied reference must teach each and every element of the claim. MPEP §2131.

Patrick fails to teach or suggest a “cured ink selected from . . . radiation-cured inks and thermoset inks” as recited by claim 1. Further, Patrick fails to teach or suggest “a cured varnish selected from . . . radiation-cured varnishes and thermoset varnishes” as recited by independent claim 27. And Patrick fails to teach or suggest “a varnish selected from . . . radiation-curable varnishes and thermoset varnishes” as recited by independent claims 54 and 55.

Further, Patrick fails to teach or suggest *curing* an ink or varnish to form a radiation-*cured* ink or a radiation-*cured* varnish; and accordingly, Patrick fails to anticipate or suggest independent claims 1, 27, and 54-55.

Although the previous Office action states that Patrick discloses that the “entire film is treated with radiation thus causing crosslinking” (Office action mailed April 18, 2006 at section 4), Patrick has nothing to do with radiation *curing* of an ink or a varnish. The present Application describes radiation “curing” of inks and varnishes, as that term is understood to those of skill in the art. Radiation-curable varnish systems have:

the ability to change from a fluid phase to a highly cross-linked or polymerized solid phase by means of a chemical reaction initiated by a radiation energy source, such as ultra-violet ("UV") light or

electron beam ("EB") radiation. Thus, the reactants of the radiation-curable overprint varnish system are "cured" by forming new chemical bonds under the influence of radiation. Radiation-curable inks and varnish systems are described in *The Printing Ink Manual*, Chapter 11, pp.636-77 (5th ed., Kluwer Academic Publishers, 1993).

(Application at page 21, lines 2-10.) The reactants of a radiation-curable varnish include: i) monomers (e.g., low-viscosity monomers or reactive "diluent") and ii) oligomers/prepolymers (e.g., acrylates). (*Id.* at lines 20-21.) A radiation-curable *ink* incorporates one or more colorants with the monomer and oligomer/prepolymer reactants, such as those described for the radiation-curable varnish. (*Id.* at page 19, lines 19-22.)

Patrick fails to teach anything about radiation polymerization of monomer and oligomers/prepolymer reactants to change from a fluid phase to form a solid phase. This is because rather than disclosing radiation-cured inks and varnishes, Patrick teaches irradiation of a film to "induce cross-linking between molecules of the irradiated material." (Col. 13, lines 35-37.) This irradiation procedure is a well-known method to enhance the surface energy of the film -- for example, to improve the adhesion of the ink to the film surface -- or to improve the strength of the film and help to avoid burn through during heat seal operations. (*See* the present Application, page 17, lines 6-12 and 18-22.) Such an irradiation procedure has nothing to do with radiation *cured* inks and varnishes.

The previous Examiner characterized an earlier-applied reference -- U.S. Patent 6,231,953 to Mossbrook -- similarly to the way the Patrick reference is now characterized. In response, Applicants submitted the Declaration of Mendy J. Mossbrook, one of the inventors of the Mossbrook '953 reference and also one of the inventors of the Patrick '136 reference ("Walden" is Mossbrook's maiden name). In that Declaration, Ms. Mossbrook explained that the Mossbrook reference does not disclose a radiation-cured ink or varnish, as those terms are understood in the art.

That Declaration discussion applies as well to the Patrick reference now under consideration. Please see the Response mailed August 25, 2003 and the Declaration of Mossbrook attached to that Response.

Further, with respect to the Patrick reference now under consideration, the previous Examiner explicitly stated that the Patrick reference "fails to teach the use of heat/radiation curable printing inks." (Office action mailed Dec. 3, 2003 at section 7.)

The rejected dependent claims contain recitations in addition to those of the independent claims from which they depend, and are therefore further patentable over Patrick.

II. Rejection based on Patrick and Elms

Claims 11, 14-16, 36, 39, 41, 77, 87, and 93-96 were rejected under 35 U.S.C. 103(a) as obvious in view of Patrick combined with U.S. Patent 3,976,614 to Elms.

Applicants respectfully traverse these obviousness rejections by directing the Examiner's attention to the comparative data in the Application (page 33, line 27 to page 36, line 15) as objective evidence establishing non-obviousness, and in particular the Samples Nos. 7-8 incorporating a thermoset overprint varnish system, as discussed in more detail below. There was no reason to have expected that the use of a thermoset varnish with a printed anti-fog film would cause the Samples 7-8 films to have superior anti-fog performance after exposure to ghosting-inducing conditions, as shown by the comparative data.

As described in the Example section of the Application, eight samples of printed anti-fog films (Sample Nos. 1-8) were formed by applying a solvent-based ink formulation to one side of equivalent plastic films that incorporated 3% antifog agent in the outer layers. (Page 35, lines 7-16.) The "comparison" films of Samples Nos. 1-2 did not include either a radiation-cured varnish or a two-part reactive thermoset varnish on the print of the anti-fog film. Samples Nos. 3-6 were made according to the present invention because a cured overprint varnish (i.e., electron-beam curable overprint varnish) was on the print of the antifog film. (Page 35, lines 17-21.) Samples Nos. 7-8 were made according to the present invention because a cured overprint varnish (i.e., a two-part reactive thermoset varnish) was on the print of the antifog film. (Page 35, line 21 to page 36, line 2.)

Each of Samples 1-8 were subjected to conditions simulating storage of the printed films in roll form, which is the believed cause of “ghosting” (explained in the Application, page 2, lines 4-19). The comparative Samples 1-2 demonstrated deteriorated antifog characteristics, as shown by the Antifog Ratings of 1; whereas, the Samples 3-8 according to the present invention did not demonstrate any significant deterioration of antifog characteristics, as shown by the Antifog Ratings of 4.5 to 5 (“excellent”).

There was no reason to have expected that the use of a radiation-cured overprint varnish or a thermoset varnish with a printed anti-fog film would cause the Samples 3-8 films to have superior anti-fog performance after exposure to ghosting-inducing conditions, as shown by the comparative data.

III. Rejection based on Patrick and Fairbanks

Claims 27-35, 37-38, 40-55, 62-76, 78-86, 88-92, 95, 97-106 were rejected under 35 U.S.C. 103(a) as obvious in view of Patrick combined with U.S. Patent 4,008,115 to Fairbanks.

Applicants respectfully traverse these obviousness rejections by directing the Examiner’s attention to the comparative data in the Application (page 33, line 27 to page 36, line 15) as objective evidence establishing non-obviousness, and in particular the Samples Nos. 3-6 incorporating an electron-beam cured overprint varnish system, as discussed in more detail in the previous section II.A. There was no reason to have expected that the use of a radiation-cured overprint varnish with a printed anti-fog film would cause the Samples 3-6 films to have superior anti-fog performance after exposure to ghosting-inducing conditions, as shown by the comparative data.

Also, regarding claims 48-49, 65-66, and 98-99, neither Patrick nor Fairbanks teaches or suggests “electron-beam radiation having an energy of less than about 100 keV” or “less than about 50 keV.” Therefore, the combination of these references fails to establish a *prima facie* case of obviousness at least with respect to claims 48-49, 65-66, and 98-99 required to shift the burden of rebuttal to Applicants.

Regarding claim 81, neither Patrick nor Fairbanks teaches or suggests a “thermoset melamine-based varnish.” Therefore, the combination of these references fails to establish a *prima facie* case of obviousness at least with respect to claim 81 required to shift the burden of rebuttal to Applicants.

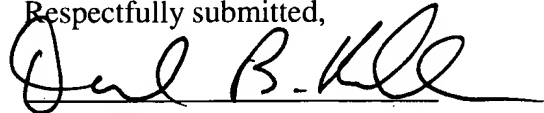
IV. Conclusion

In view of these remarks, it is respectfully submitted that the present application is in condition for allowance. A notice to that effect is earnestly and respectfully requested.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Daniel B. Ruble", written over a horizontal line.

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